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MISSOURIENSIS

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Missouriensis is the official publication of the Missouri Native Plant Society. Founded in 1979 as a non-profit corporation, the Society is devoted to the conservation and study of the plants growing wild in Missouri, to the education of the public about the significance of the native flora and its habitat, and to the publication of related information.

Missouriensis is published quarterly by the Society. Manuscripts and illustrations are welcome, but cannot be returned unless accompanied by a stamped, self-addressed envelope. Contributions should be submitted in duplicate to Erna R. Eisendrath, Box 1137, Washington University, St. Louis, MO 63130.

Rules for submission of manuscripts are as follows: Typed on 8½ x 11-inch paper with one-inch margins; titles centered on page. Paragraphs should be typed single-space in block style, with double-spacing between paragraphs. Manuscripts should be signed and the author's address given briefly at the top of the article immediately beneath the title. Text of the article should follow two spaces below. We request that manuscripts be limited to three pages. Drawings and/or maps should be submitted in black or india ink. Bibliographies and/or references should be limited to a necessary minimum using abbreviations. Send change of address information to: Richard Daley, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166.

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Minutes of Last Meeting

MISSOURI NATIVE PLANT SOCIETY BOARD MEETING

St. Louis, Saturday, December 5, 1981, 12 to 2 P.M.

Following a morning of touring the Library and Herbarium of the Missouri Botanical Garden, Board members assembled (box lunches in hand) in the auditorium for the call to order by President Paul Redfearn. In attendance were Melvin Conrad, Rick Daley, Erna Eisendrath, Karen Haller, John Karel, Bob Mohlenbrock, Paul Nelson, Ken Olson, Paul Redfearn, Ginny Wallace, Wally Weber and Jim Henry Wilson. Other members and guests present were George Balogh, Dorothy Cole, Art Christ, John Doggett, Rod Doolen, Jean Freiling, Becky Haefner, Phillip Koenig, John Molyneaux, Sherry Morgan, Nancy Morin, Barb Mykrautz, Wanda Oskins, Ann Ruger, Susan Russell, Fr. Jim Sullivan, Joanna Turner, Mervin Wallace, Jean Webdell, and Tom Welton.

MINUTES. Minutes of the September Board meeting were approved as published in Missouriensis.

TREASURER'S REPORT. Rick Daley's eleven month financial report showed that income exceeded expenses by only $142.77. Our largest outlay of funds is for printing and mailing of Missouriensis, $1,233.58. It was encouraging to note that 15% of our members join at a higher level than that of regular membership dues.

OLD BUSINESS. Missouri Flora Update. Paul Nelson submitted a proposal for updating the Inventory of distributional records. (See pg. 18). It was suggested that one resident per county conduct the survey, providing training and assistance to those interested in helping. A workshop for educating interested Missouri Native Plant Society members was suggested as a part of a future meeting. Recognition by some type of annual award to outstanding collectors was also suggested.

NEW BUSINESS. Number of Board meetings. President Paul Redfearn suggested that four Board meetings per year may be too many. A discussion followed on the pros and cons of 4, 3, and 2, with no decision being reached. It was considered a feasible plan to have the Board meet on Friday evenings prior to the Saturday general meetings, thus leaving that day free for workshops and field trips.

FUTURE MEETINGS. Melvin Conrad announced a Saturday, March 6, 1982 meeting in Cape Girardeau, to be held in the University Center of Southeast Missouri State University. Otto Ohmart will serve as our host. Tentative field trips include Big Oak Tree State Park, and the Lowlands, 16 miles outside of Cape Girardeau. The summer meeting will be held Saturday, June 5, 1982 in Warrenburg, at Central Missouri State University, with Dave Castener as host.

REPORT OF BYLAWS COMMITTEE. Jim Henry Wilson distributed copies of the revised by-laws to each Board member. It was noted, during discussion, that the incorporation papers list us officially as Missouri Native Plant Society and thus it must appear as such in the bylaws. Most changes occurred in regard to Article VIII, Chapter and Affiliate Organizations. Section 2 of Article IV, Dues, was struck from the bylaws. It was moved and approved by the Board that the revised bylaws be adopted. Publication of the revised bylaws will appear (reduced in size) in the next issue of Missouriensis. (See pg. 26).

MEMBERSHIP COMMITTEE. Jim Henry Wilson enthusiastically reported that Rick Daley has been added to this committee. Jean Webdell is re-designing the membership application to include the logo. Wanda Oskin is attempting to form a chapter at Southern Illinois University. When others wish to form local chapters, the Membership Committee is eager to assist.

OTHER BUSINESS. Missouriensis. Erna Eisendrath reported expenses to be terrible. Paul Redfearn and Wally Weber suggested that the University print shop at Southwest Missouri State University could handle the printing at one-half the present cost...with one slight stipulation. There must be wording on the cover sheet, tying the university to the Missouri Native Plant Society. As the monetary advantage seemed to outweigh any possible disadvantages, it was determined to utilize the S.M.S.U. facilities for the next printing.

NOTIFICATION OF MEETINGS. Dorothy Cole requested that announcement of the meetings be made more public, suggesting publication in local nature club newsletters and bulletins.

DISPLAY BOARD. Ginny Wallace requested release from custodianship of the display board. A smaller version was suggested for future usage.

OFFICIAL ADDRESS. Rick Daley suggested that we use the Missouri Botanical Garden as the official address of the Missouri Native Plant Society. It was agreed and thus it shall be filed with the Secretary of State and on future income tax forms.

GLOBAL 2000 CONFERENCE. Members of MONPS can expect a mailing in regard to this February 26 conference, to be held at the Chase-Park Plaza Hotel, in St. Louis.

IRISH WILDERNESS. John Karel and Paul Nelson have volunteered to write and send a resolution for our society in favor of wilderness designation prior to core drilling in the Irish Wilderness.

THANKS. Our heartfelt thanks are extended to the Missouri Botanical Garden for the use of the facilities both Friday evening and Saturday. We especially thank Barb Mykrautz, Nancy Morin, and Marshall Crosby for their part in the educational program.

Respectfully submitted,

Karen S. Haller, Secretary

We're Spreading Our Branches

Paul Nelson

Now that the Missouri Native Plant Society is almost three years old, with its roots well established and its main stem reaching maturity, the time for branching out has come. The Society now extends a hearty welcome to those individuals, clubs, or other organizations in any part of our area with an interest in forming a chapter or becoming an affiliate of "MoNPS". Such potential new growth germinates from the newly revised bylaws of our Society, its provisions printed out on pg. 26 of this issue of Missouriensis.

Among challenges and opportunities now open to each new chapter and/or affiliate are included regional floristic inventories, local field trips, educational programs and exhibits. Such activities can be outlined in the provisions of bylaws set up by each such group for its own governing.

Officers and members of MoNPS will enthusiastically welcome the budding out next spring of new branches bringing to the parent organization new growth and vitality.

Missouri Glades - Part 1

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Most people with an interest in Missouri's plant life have at least a passing familiarity with glades. Most, however, have probably never explored our rich glade heritage. Missouri has perhaps the greatest glade extent and diversity of any state, with over 410,000 acres of glades.

Glades can be generally defined as naturally occurring rocky barrens dominated by a characteristic and predominately herbaceous flora. Glades often occur on south and west slopes of otherwise forested regions, primarily because increased solar dessication on sites with these aspects precludes dense arborescent growth. Soil cover on glades, when present, is extremely thin. This lack of soil cover and the presence of bedrock at or near the land surface results in extremely xeric conditions throughout much of the year. Glade formation has been linked to past erosional activity and resistance of substrates to weathering. In Missouri, a mantle of glacial deposits has covered virtually all glade producing formations in the northern half of the state. Thus, the overwhelming majority of the state's glades occur in southern Missouri.

Fortunately, because of their rugged topography, inaccessibility, lack of soil, and widely fluxuating temperature and moisture extremes, many glades have retained a high degree of natural integrity. Nonetheless, in light of the continued development and expansion occurring in Missouri, the Department of Natural Resources is conducting a statewide glade inventory and flora analysis. The preliminary results of this study have resulted in the development of a substrate-based glade classification scheme which will hopefully serve as a tool for establishing a comprehensive statewide network of preserved glade community types in addition to a popular illustrated publication entitled Guide to Missouri Glades. Many characteristic glade plants have a high degree of fidelity for a particular substrate, and glades on the same substrate display very similar floristic composition. Thus, a substrate-based classification scheme is essential when evaluating statewide patterns of glade distribution. Missouri glades may be classed into six main substrate groups, each of which is briefly described in the following discussion. Accompanying maps display the distribution and density of glades of each substrate type in Missouri, as mapped on a grid of 7.5 minute USGS quadrangles.

1. DOLOMITE GLADES: These are a characteristic feature of dissected hill country throughout much of the Ozarks. Dolomite is generally more acidic and presents different mineral availabilities than the related limestone, resulting in markedly different floras on dolomite and limestone glades. Glades occur on several dolomite formations, but in Missouri the Jefferson City-Cotter and Powell formations have by far the largest proportion of total glade area. Because of frequent thick bedding in these formations, dolomite glades are often massive in extent. Glades on the Jefferson City-Cotter and Powell formations encircle the central Ozark dome except for the alluvial lowlands of southeastern Missouri. Dolomite glades on Cambrian and Ordovician age formations occur in numerous small areas throughout the Ozark dome. These glades, frequently occurring along major river drainages, tend to be extremely stony and xeric, with fre-

quent exposed shelves and ledges. Because of generally thinner bedding planes, glades in these formations are generally smaller in extent than other dolomite glades. Total dolomite glade area in the state approximates 400,000 acres.

2. LIMESTONE GLADES: These glades occur in several limestone formations, principally in southwestern Missouri, along the eastern portions of the Missouri River, and in the Lincoln Hills of eastern Missouri. Because of generally thin bedding planes, these glades are elongate, often sinuous, narrow areas on steep slopes along major drainages, and are seldom massive in extent. The largest concentration of limestone glades in the state occurs on the Burlington-Keokuk formation north of Springfield. More than 3,000 acres of limestone glade exist in Missouri.

3. SANDSTONE GLADES: Sandstone glades occur in limited extent on a number of formations in various parts of the state. Glades on St. Peter sandstone occur in a broad arc north of the Ozark dome. These glades are linear expanses of up to 15 acres, generally on outcrops along narrow ridges and bluff escarpments with a southern or western exposure. Glades on LaMotte sandstone occur primarily along creeks in St. Genevieve County. Individual LaMotte sandstone glades are small, averaging slightly over 1 acre in extent. The largest sandstone glades in the state, ranging up to 50 acres in size, occur on Channel Sands deposits west of Springfield. Here expanses of sandstone are exposed on gently rolling uplands and along south-facing slopes of narrow tributary valleys. Glades occur on other sandstone formations, as depicted on the accompanying map. Because of prevailing acidic conditions and thin or nonexistent soil cover, sandstone glades are characterized by a stunted arborescent flora and bare or lichen and moss encrusted rock expanses. Total sandstone glade area in the state is approximately 2,000 acres.

4. IGNEOUS GLADES: As the only major exposure of precambrian igneous rocks in the midcontinental United States, the central Ozark dome in southeastern Missouri provides a series of unique habitats for plant colonization. Igneous glades commonly occur on the upper slopes of broad domes, as well as on narrow ridges and along drainages and shut-ins. In extent, these glades range from small moss and lichen encrusted rhyolitic outcrops to expanses exceeding 100 acres. Glades are more common on rhyolites than on granites because of the smaller component crystal size and concommitant increased weathering resistance in the former. Total igneous glade area in Missouri is about 8,000 acres.

5. SHALE GLADES: Missouri shale glades are very restricted in extent and distribution, generally occurring on steep south-facing slopes along major drainages and mounds. Because massive shale exposures rapidly weather into small flakes, a steep slope with constant shifting and erosion is necessary for the establishment and continued existence of shale glades. Less than 500 acres of shale glades exist in Missouri.

6. CHERT GLADES: Although massive chert exposures are known from several localities in Missouri, chert glades are known only from limited areas on the Grand Falls chert formation of southwestern Missouri. This formation is a bed of solid, often brecciated chert with extensive exposures along Shoal and Turkey creeks. The two largest chert glades in the state, encompassing areas of 15 and 20 acres, are located in Wildcat City Park, Joplin. Total chert glade area in the state does not exceed 200 acres. It should be noted that glades with a mantle of chert residuum formed from eroded cherty dolomite or limestone disp a close degree of floristic affinity to glade types of the parent material, a are not considered chert glades in this classification scheme.

NEXT: A look at some special plants from each glade type.

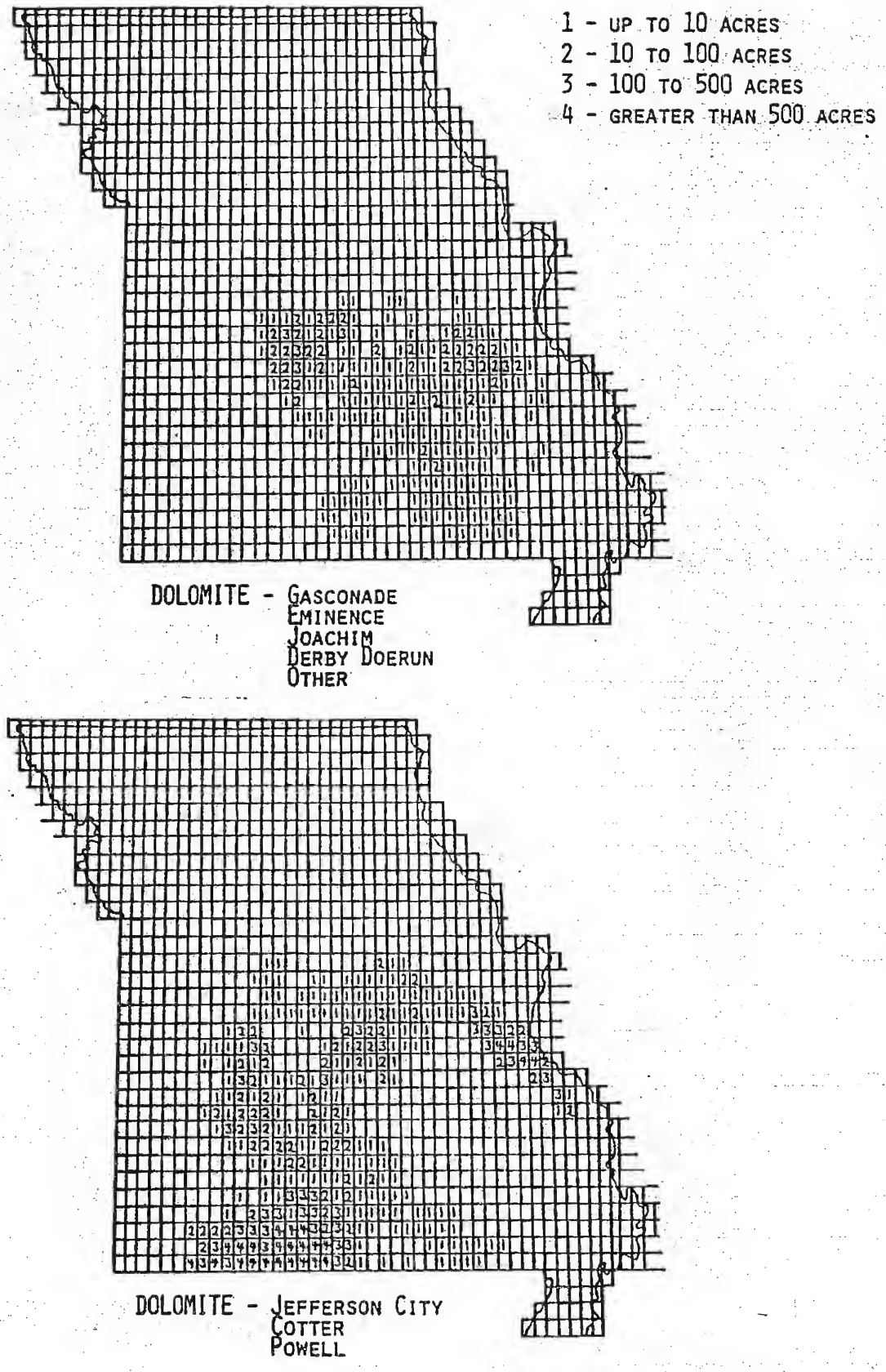

Figure 1. Statewide glade density profile for dolomite glades over 7.5 minute quadrangle grid.

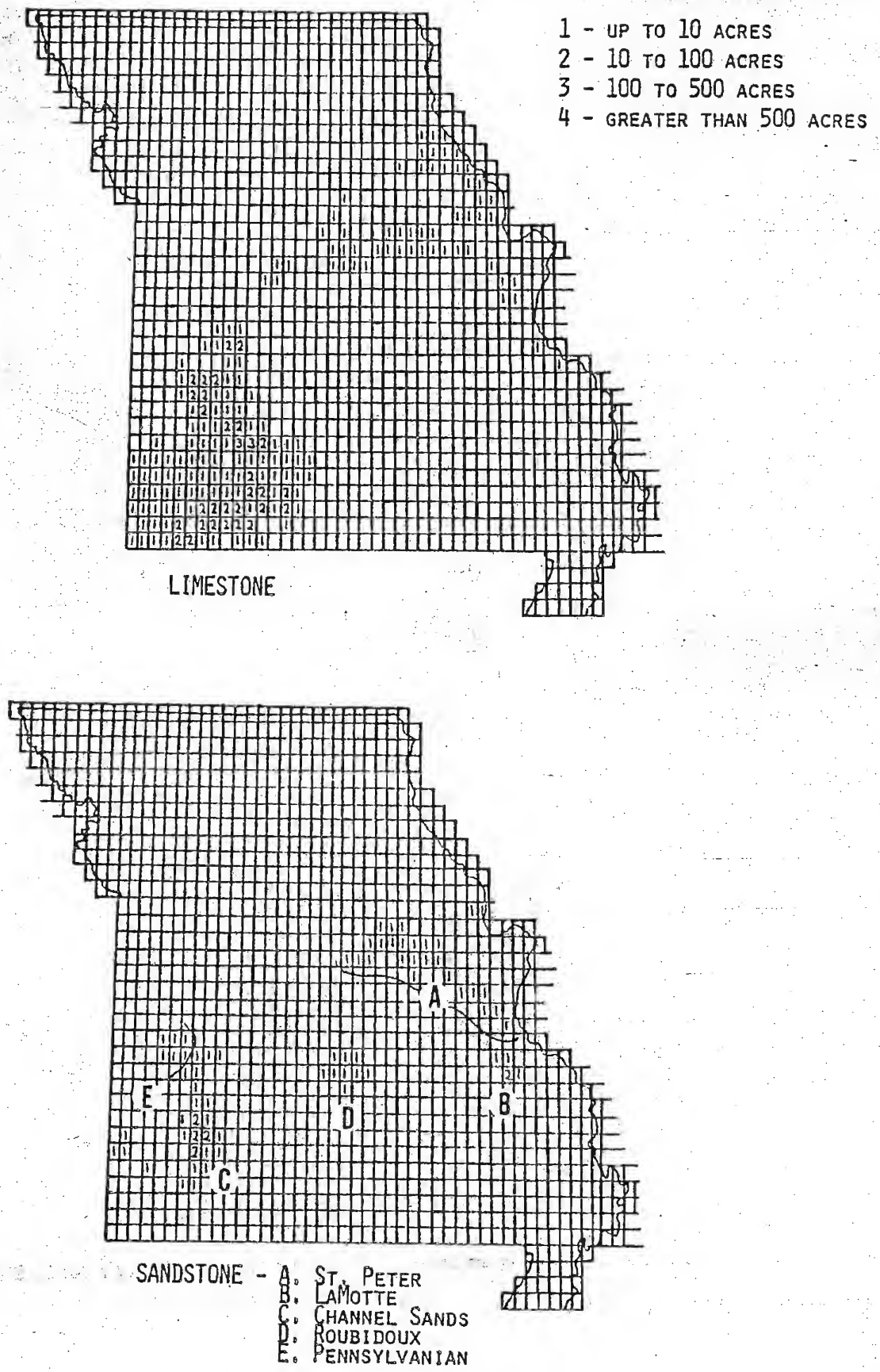

Figure 2. Statewide glade density profile for glades on limestone and sandstone substrates over 7.5 minute quadrangle grid.

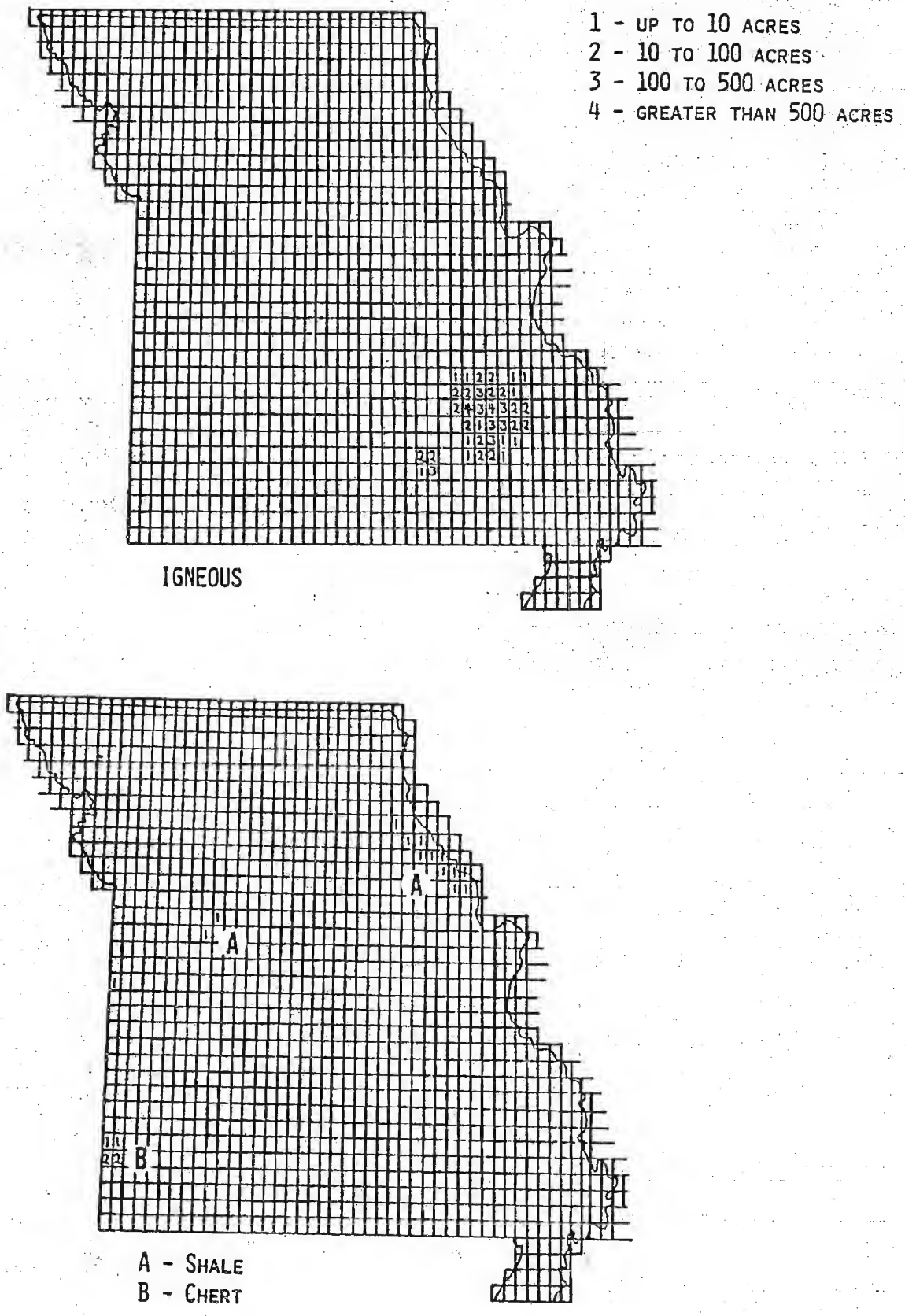

Figure 3. Statewide glade density profile for glades on igneous, chert and shale substrates over 7.5 minute quadrangle grid.

Peat Mosses of Missouri

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Peat mosses (Sphagnum) are well known for their ability to absorb and hold large amounts of water. They also create acid habitats because of their ability to exchange hydrogen ions for other cations, especially magnesium and calcium. A fine summary of the ecology of peat mosses as well as the many uses made of them is provided by Crum (1976).

In Missouri, peat mosses are more or less confined to the Interior Highlands and are most likely to be encountered in the Eastern Salem Plateau. Plants commonly form large patches on sandy soil along small creeks, gullies and ravines, and on moist shaded sandstone ledges. Occasionally patches are found around the edges of small impoundments. Peat bogs like those found further north are not known in Missouri.

Although peat mosses are often considered difficult to identify, one can learn to identify them with relative ease if skill and patience is employed in making cross sections of stems and leaves for microscopic examination. Free hand sections should be made from wet stems and leaves with a sharp scalpel. The eleven taxa of peat mosses presently known to occur in Missouri (Gier, 1955; Redfearn, 1972) may be identified by the following key and the illustrations in Figures 1-23; their distribution is shown in Figure 24.

1. Surface cells of stems and branches reinforced with fibril-bands (Fig. 5).
   2. Green cells of branch leaves usually isosceles-triangular in cross section (Fig. 4).
      3. Walls of colorless cells of branch leaves adjacent to green cells smooth (Fig. 4). . . . . S. palustre
      3. Walls of colorless cells of branch leaves adjacent to green cells with longitudinal ridges (Fig. 8). . . . . S. henryense
   2. Green cells of branch leaves usually forming an equilateral triangle in cross section (Fig. 23) . . . . . S. imbricatum
1. Surface cells of stems and branches not reinforced with fibril bands (Fig. 3).
   4. Green cells of branch leaves with at least the upper or lower surface exposed (Figs. 2, 4, 6, 8, 9, 11, 15, 18, 22, 23).
      5. Green cells of branch leaves exposed entirely or more broadly on the outer (lower) surface (Figs. 6, 9).
         6. Outer cells of stem (as seen in cross section) small and thick-walled (Fig. 10). . . . . S. recurvum
         6. Outer cells of stem large, thin-walled, in 1-3 layers (Fig. 7). . . . . S. cuspidatum
      5. Green cells of branch leaves equally exposed on upper and lower surface, or exposed entirely or more broadly on the inner (upper) surface (Figs. 2, 4, 8, 11, 15, 18, 22, 23).
         7. Green cells equally exposed on both surfaces (Fig. 2). . . . . S. subsecundum
         7. Green cells exposed entirely or more broadly on the inner surface (Figs. 4, 8, 11, 15, 18, 22, 23).

8. Leaves of stem conspicuously lacerate-fringed across the apex (Fig. 12). . . . . S. fimbriatum
8. Leaves of stem not conspicuously lacerate-fringed across the apex (Fig. 13).
9. Outer cells of stem without pores (Fig. 14, 19).
10. Colorless cells of stem leaves with ringed pores on outer-lower surface (Fig. 16) . . . . . S. tenerum
10. Colorless cells of stem leaves without ringed pores on the outer surface (Fig. 17) . . . . S. fuscum
9. Outer cells of stem with pores (Fig. 21) . . . S. russowii
4. Green cells of branch leaves not exposed on either the upper or lower surface (Fig. 20). . . . . S. compactum

List of Taxa

1. Sphagnum compactum Lam. & DC. Figure 20. Franklin, Iron, Madison, St. Francois, and Ste. Genevieve Counties.
2. Sphagnum cuspidatum Ehrh. ex Hoffm. Figures 6-7. Barton and Ripley Counties.
3. Sphagnum fimbriatum Wils. Figures 11-12. Stoddard County.
4. Sphagnum fuscum (Schimp.) Klinggr. Figures 17-19. Ste. Genevieve County.
5. Sphagnum henryense Warnst. Figure 8. St. Clair and Ste. Genevieve Counties.
6. Sphagnum imbricatum Hornsch ex Russ. Figure 23. Stoddard County.
7. Sphagnum palustre L. Figures 4-5. St. Clair and Ste. Genevieve Counties.
8. Sphagnum recurvum P.-Beauv. Figures 9-10. Polk County.
9. Sphagnum russowii Warnst. Figures 21-22. Ste. Genevieve County.
10. Sphagnum subsecundum Nees ex Strum. Figures 1-3. Butler, Franklin, Howell, Iron, Lincoln, Madison, Reynolds, Ripley, Shannon, Ste. Genevieve and Wright Counties.
11. Sphagnum tenerum Sull. & Lesq. Figures 13-16. Ste. Genevieve County.

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Crum, H. A. 1976. Mosses of the Great Lakes Forests. Revised Edition. University Herbarium, University of Michigan, Ann Arbor, 404 p.

Gier, L. J. 1955. Missouri Bryophytes. Trans. Kansas Acad. Sci. 58:24-49.

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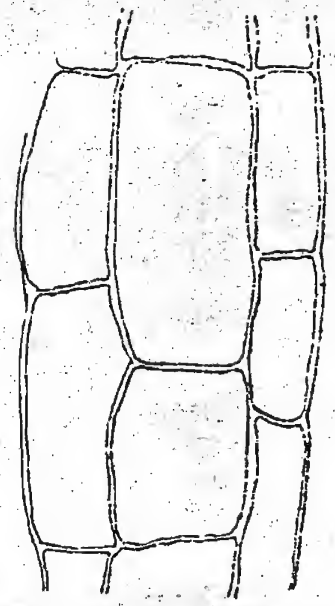

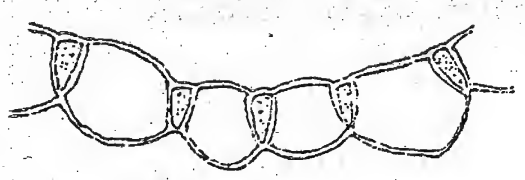

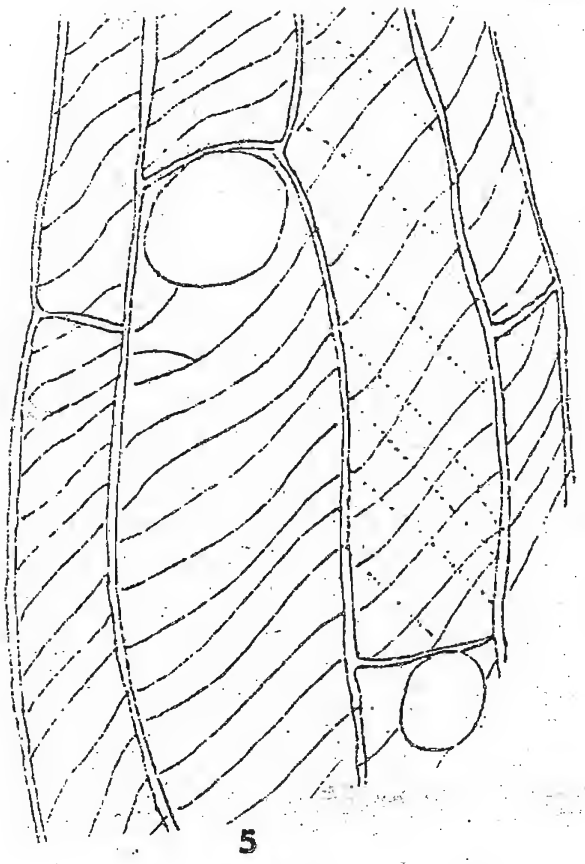

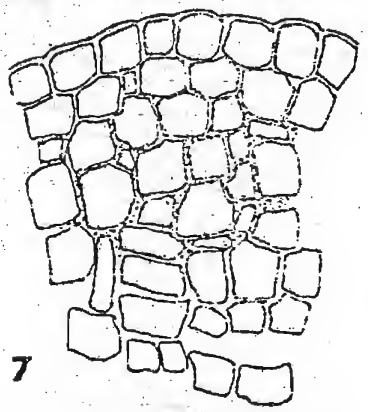

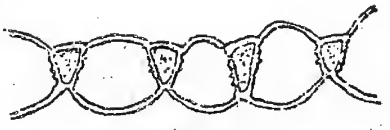

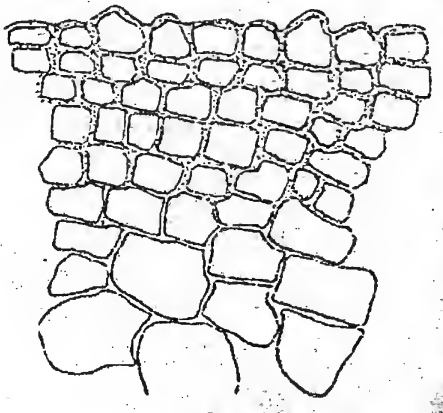

Figures 1-10. Sphagnum subsecundum: 1, habit; 2, cross section of branch leaf; 3, surface view, outer cells of branch. Sphagnum palustre: 4, cross section of branch leaf; 5, surface view, outer cells of branch leaf. Sphagnum cuspidatum: 6, cross section of branch leaf; 7, portion of cross section of stem. Sphagnum henryense: 8, cross section of branch leaf. Sphagnum recurvum: 9, cross-section of branch leaf; 10, portion of cross section of stem.

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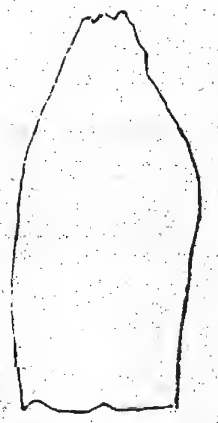

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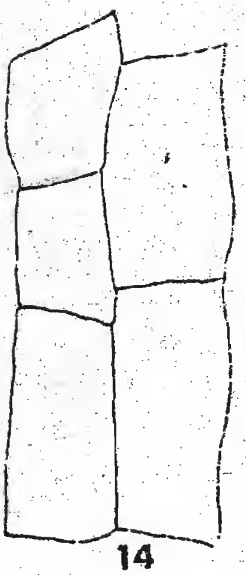

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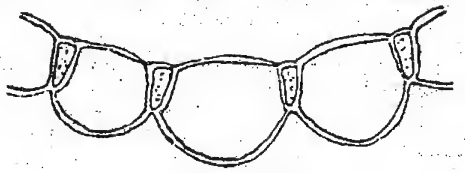

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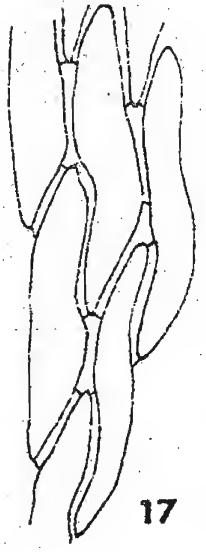

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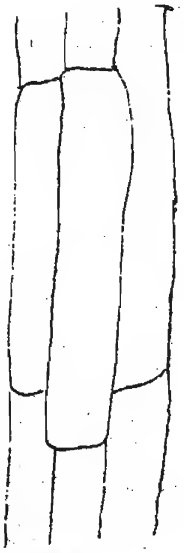

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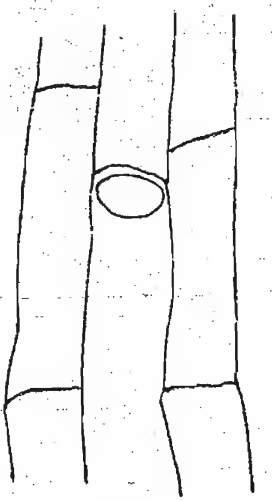

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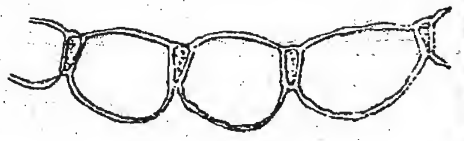

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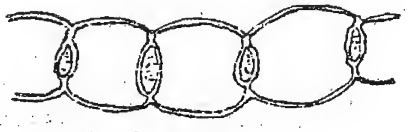

20

23

Figures 11-23. Sphagnum fimbriatum: 11, cross section of branch leaf; 12, stem leaf. Sphagnum tenerum: 13, stem leaf; 14, surface view, outer cells of stem; 15, cross section of branch leaf; 16, outer surface view of cells of stem leaf. Sphagnum fuscum: 17, outer surface view of cells of stem leaf; 18, cross section of branch leaf; 19, surface view, outer cells of stem. Sphagnum compactum: 20, cross section of branch leaf. Sphagnum russowii: 21, surface view, outer cells of stem; 22, cross section of stem leaf. Sphagnum imbricatum: 23, cross section of branch leaf.

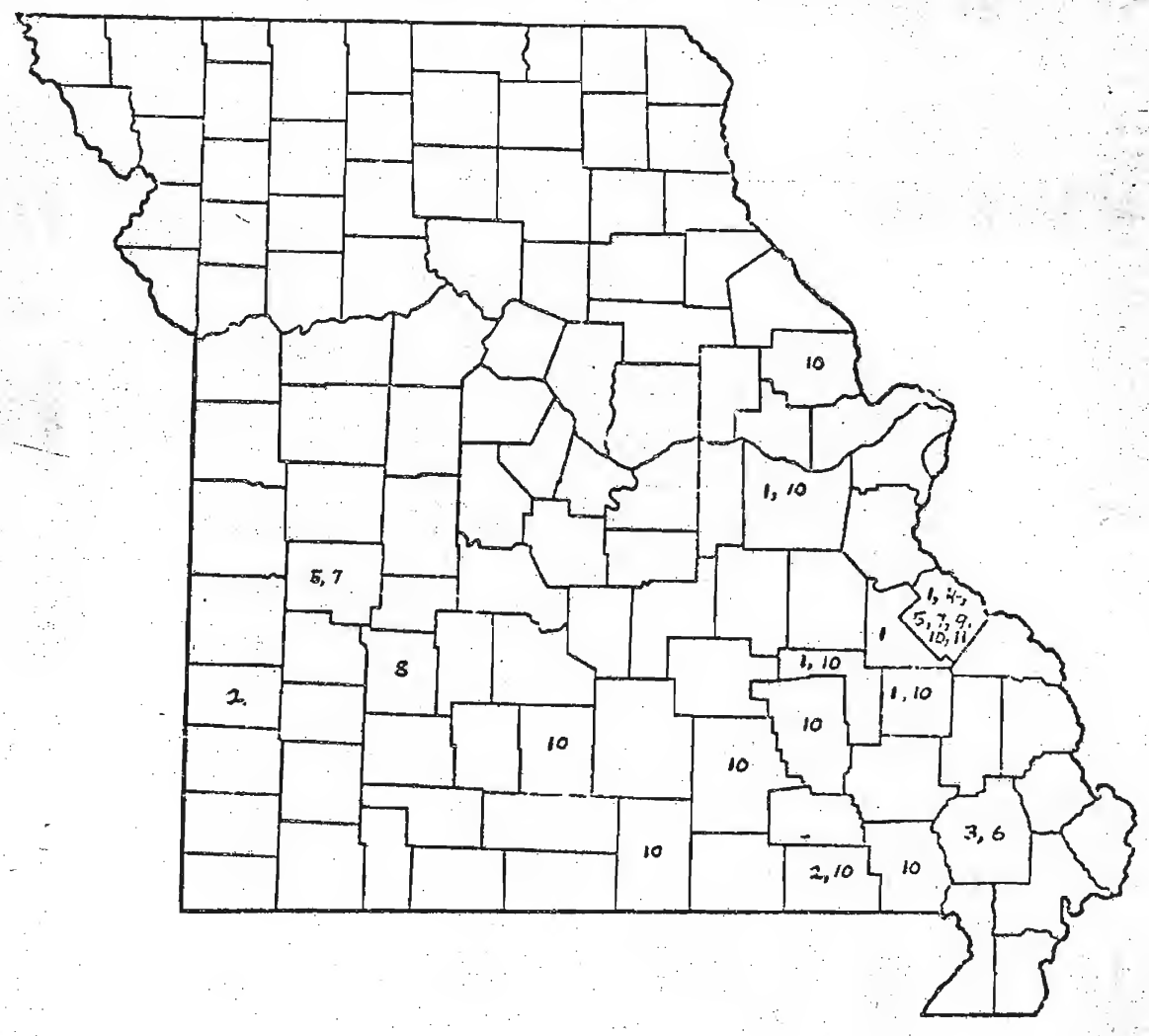

Figure 24. Distribution of Sphagnum in Missouri. Numbers refer to taxa enumerated in the List of Taxa.

Ξενοφοβια

by Edgar Denison

544 East Adams
St. Louis, MO 63122

If this heading looks like Greek to you, then, as usual, you are correct. Translated as "Xenophobia", it means "fear of strangers or matters foreign" and exactly expresses my reaction to a story which appeared in the October, 1981, issue of Missouriensis. Under the title "A Rat With Petals", it referred to the shrub Lythrum salicaria.

In the nearly eighty years of my life, I have never before heard of a plant being equated with that destructive, vicious, and dangerous rodent, Rattus norvegicus. What basis has this connotation? Here are some background observations: Lythrum salicaria is widely distributed throughout northern Europe, where it is native. Although this species is also widely used as a garden shrub, in the moist situations it prefers, the plant has not usurped the wetlands of that area.

L. H. Bailey, in his Standard Cyclopedia of Horticulture (1904), lists the shrub as much planted, indicating that it has long been around on this continent and is certainly not a newcomer. Today, several improved varieties are sold by many nurseries. I have had two shrubs in my garden for at least 45 years, and they have not spread through seeding. Gleason, in the 1952 edition of Britton and Brown, describes its distribution on this continent as introduced in marshes and along the shores of lakes and rivers, becoming increasingly abundant from Quebec and New England to Michigan, and at many scattered localities south to Maryland. According to Steyermark, in many eastern and northern states the plant is abundant in streams, forming dense colonies and often choking out other plants. However, he found that in Missouri it has rarely escaped from cultivation. The plant seems now to be spreading but only in ecosystems which do not exist in Missouri in the natural state: "managed" wetlands along our major rivers, and the shores of lakes, small or large.

It is grade school knowledge that as the early settlers, moving west, eliminated the indigenous forest and, a little later, thanks to the mold-board plow, the native prairie. This vast disturbed land was not reclaimed by native plants, but by immigrants, plants which had a few thousand years of experience in utilizing soil disturbed by man. Lythrum salicaria is just one more species which moves in when we "mess" with the land.

"Managed" wetlands certainly discourage the native flora thanks to artificially lowered or raised water levels and the introduction of plants, which are beneficial to wildlife, especially waterfowl. If Lythrum salicaria can establish itself under such conditions and competition, then it is not a menace but, rather, a gain.

When it comes to lakes, the circumstances are even more obvious. For untold years I have been sidetracked, whenever my path came near a lake, hoping to find some interesting native shore-plants. The results of those searches were almost totally negative. Why? Latest official data place some 325,000 lakes (yes, threehundredtwentyfivethousand) in Missouri. Only very, very few of these are natural lakes. My guess is, that over 324,000 are man-made! This is NOT lake country. Scorching summers with droughts lower the waterlevels and dry out the shores. The year 1981 was the one exception in over 50 years! Torrential rains

raise the waterlevels way above "normal". In the overwhelming majority of these lakes a native flora just does not exist. If Lythrum salicaria can survive those conditions it does NOT replace amything, but is a valuable addition.

I sincerely doubt that Lythrum salicaria is really aggressive. As said before, it has been around for a long time. A good-size planting at the upper lake of the Missouri Botanical Garden Arboretum, which has been there many years, has stayed put and has not spread to other parts of the lake. Nor has the species appeared in another lake only a short air distance away.

Lastly, we are told that as members of the Missouri Native Plant Society we must "eradicate introduced plants". I do not remember having sworn this oath, and this is quite an order! Depending on how we count, there are about 25% of our angiosperms which we would have to eliminate, some of them so widely distributed, that we may deal in millions of specimens (e.g. Oxeye Daisy). Yes, it would be nice, if we could get rid of some troublesome inhabitants, but after you have gotten rid of Japanese Honeysuckle, Multiflora Rose, Kudzu, and other "foreigners", please do not forget the beloved Poison Ivy and Stinging Nettle, though they are natives. I, for one, will enjoy Lythrum salicaria and wish it well.

REBUTTAL

Ginny (Klomps) Wallace
Missouri Department of Conservation

I would like to take this opportunity to clarify my position on *Lythrum salicaria*, in light of Mr. Denison's comments.

It is true Steyermark found that purple loosestrife rarely escaped from cultivation in Missouri. However, the Flora was written nearly 20 years ago, and in light of the following information, the status of *L. salicaria* in Missouri warrants serious investigation.

According to Daniel Q. Thompson of the U. S. Fish and Wildlife Service, there is a pattern in the invasion and establishment of *L. salicaria* in the east and midwest. In general he has found that there is a 50 year or more lag time between early records of occurrence and recognition of serious infestation. The exact cause of this lag time is unknown. It may be a period of acclimation and ecotype selection, or a slow spread from local seed sources. In any case, Thompson's observations suggest that Missouri is by no means safe from serious infestations, even though only limited occurrences are reported in Steyermark.

In Europe where purple loosestrife is native, it exists successfully with such wetland species as cat-tail, and various sedges and bulrushes. In North America, however, loosestrife forms large, dense, monospecific stands, successfully out-competing the native cat-tails, reed, reed canary grass and other wetland vegetation.

The potential impact of this species in Missouri is far reaching. It is most likely to colonize wetlands artificially manipulated to encourage waterfowl. These same areas also provide food and cover for numerous shorebird species. In these situations purple loosestrife, which has little if any food value, excludes desirable food plants, and is also impenetrable to boats. It can (and has) become a costly wetland management problem.

In the east, loosestrife has been highly successful in colonizing inland fresh meadow, shallow fresh marsh and deep fresh marsh habitats (Shaw & Fredine's type 2, 3 and 4, 1956). In Missouri these habitat types include calcareous wet meadows, wet prairies, oxbows, and sinkhole ponds. Should purple loosestrife become established in any of these native areas, it could impact populations of such species as Thalia, corkwood, queen-of-the-prairie and grass pink orchid. Granted the chances are small, but the potential does exist.

Outside of Missouri purple loosestrife has added to the endangerment of at least one native plant. The spreading globe flower, a native of Connecticut, New Jersey, New York, Ohio and Pennsylvania, is currently under review for official protection. It is threatened in part with exclusion from its native wetland habitats by purple loosestrife.

Lythrum salicaria is a beautiful plant; I certainly can't argue with that. It has been a welcome addition to flower gardens for many years; and carefully controlled it can, and should continue to be cultivated. However, it should not be cultivated near waterways, or misrepresented by nurseries as a native wildflower.

Finally, I do not advocate the eradication of all non-native plants as Mr. Denison suggests. However, if a non-native species threatens the existence of native ones, I will choose to protect the native.

What Others Are Doing

Frank D. Bowers
Biology Department, University of Wisconsin-SP
Stevens Point, WI 54481

It may be of interest to Missouri botanists that several states have organizations similar to the Native Plant Society of Missouri. All of these groups publish quarterly a newsletter or journal with information on field trips, society news, current research on endangered plants, propagation studies, need for information, etc....and much general information on plants of that particular state or region.

Among these, several also distribute wild flower seeds to members that request them, a plus benefit that perhaps our organization could pursue. A goodly number would survive in Missouri with protection (or occur naturally in the state) and others are worth a try. A few examples are: Aquilegia canadensis, Heterotheca ruthii, Asclepias tuberosa, Clintonia umbellata, Dodecatheon media, Iris fulva, and Lobelia cardinalis.

Seeds can be obtained from --

North Carolina Wild Flower Preservation Society
c/o Mrs. S.M.Cozart, Treasurer
900 W. Nash Street, Wilson, NC 27893

Tennessee Native Plant Society
c/o Botany Dept., U. of Tennessee
Knoxville, TN 37916

The North Carolina Wild Flower Preservation Society also has a publication which may be of interest to Missouri botanists. It is the "North Carolina Native Plant Handbook" (1977). It lists propagation methods by seed and vegetative means. Other sections are on conservation, site preparation, cultivation requirements, and lists of propagation of specific species (many of which occur in Missouri). This 79-page handbook is available for $4.50 from the: Totten Garden Center, 457-A, UNC, N.C. Botanical Garden, Chapel Hill, N.C. 27514. Discounts are available for organizations and schools.

Procedure For Updating Records

by

Douglas Ladd, Paul L. Redfearn, Jr., and Paul W. Nelson[1]

MONPS now provides a system to continuously update and disseminate distribution data for the Missouri flora in a standardized format that will make recent data readily available, provide a convenient means for reporting such data, and stimulate further exploration by MONPS members. Documented records will be published in a special supplement of Missouriensis under the direction of a special editor. The format will be a standard column-type data table appended to each issue of Missouriensis (Figure 1). This section will be printed on separate pages for easy detachment and sequential collation by those wishing to do so. Future considerations may include the availability of low cost Missouri county outline maps through MONPS for those wishing to construct updated floral distribution maps.

This system will be suitable for all components of the Missouri flora, both vascular and non-vascular. Distribution data will be reported on a county basis; this will facilitate integration with previous distribution data (i.e., Steyermark and Henderson). Fortunately, Missouri's county boundaries emulate a grid closely enough to convey meaningful phytogeographic data. For vascular plants, any county distribution record not previously reported in Steyermark (1963) or Henderson (1980) would be suitable for inclusion, provided that it has not been published in previous updates (space limitation and the possibility of a plethora of records flooding the editor initially would necessitate the reporting of a given number of records in each issue). The editor would determine the order of publication (chronological, phylogenetic, alphabetical, or some other prioritizing scheme). Replicate records submitted by different individuals would be decided on the basis of earliest collection date. Additionally, previous literature records supported by cited exsiccate and nomenclatural revisions relevant to the Missouri flora will be reported in this format as feasible.

To qualify for inclusion, a potential record should be supported by a voucher collection. In the case of potentially endangered or rare native taxa, a documented photograph depicting the key characteristics of the taxon will suffice, provided it is treated as a standard herbarium specimen with respect to labeling and final disposition. Prior to publication, a voucher specimen must be deposited in a recognized herbarium. At the end of this article will be found a list of the herbaria that have agreed to accept plants, to house them in vermin-proof cabinets, and to make them available for study. In instances where there could be potential harm to a population through publicizing locality data, the specimen label may give only the county location, with the notation "additional locality information available upon application to the curator". Because of the implications of the Freedom of Information Act, the possibility of a standard private repository (such as the Missouri Botanical

(1) Bennett Spring State Park, Brice Route, Lebanon, MO. 65536; Dept. of Life Sciences, SMSU, Springfield, MO. 65802; Missouri Dept. of Natural Resources, P.O. Box 176, Jefferson City, MO. 65102.

Garden or one of the large private arboretums) for all such specimens should be considered. In any case, when the safeguarding of a population is critical, the problem of safeguarding distribution information should be considered in the selection of a herbarium.

To insure that each specimen cited in the update is deposited in an herbarium by the time of publication, a pre-stamped postcard must be included with each shipment of specimens to a herbarium. This postcard (Figure 2), addressed to the project editor, would include all data relevant to the accompanying specimens. The curator would check the shipment against the card, sign the card, and forward it to the editor for eventual inclusion in Missouriensis. This method would insure the existence of voucher specimens while minimizing time and expense on the part of the recipient herbarium. A standard format will also exist for the reporting of annotations to previously published vouchers. THE COLLECTING OF DUPLICATE SPECIMENS IS STRONGLY DISCOURAGED; only one herbarium will be reported for each voucher submitted. In all instances of questionable records, or questions of actual spontaneity of the taxon, the editor may request that the voucher record be examined by a recognized authority.

The editor of this new venture will be Wallace R. Weber, Dept. of Life Sciences, SMSU, Springfield, MO 65802, who will be assisted by an associate editor, Douglas Ladd.

Herbaria That Have Agreed to Accept Voucher Specimens

Herbarium	Curator	Address
Central Missouri State University	David Castaner	Department of Biology Central Missouri State University, Warrensburg, MO. 64093
Missouri Botanical Garden	Nancy R. Morin	P.O. Box 299 St. Louis, MO. 63166
Northeast Missouri State University	Melvin L. Conrad 816-665-5121 3323	Science Hall, Science Division, Kirksville, MO. 63501
Ozarks Regional Herbarium	Paul L. Redfearn, Jr. 417-836-5882	Dept. of Life Sciences, Southwest Missouri State University, Springfield, MO. 65802
Southeast Missouri State University	Otto Omart	Biology Department, Southeast Missouri State University, Cape Girardeau, MO. 63701
The Southern Illinois University Herbarium	Donald Ugent	Dept. of Botany, Southern Illinois University, Carbondale, IL. 62901

Figure 1. Sample format for reporting new distributional records.

THE BOTANICAL RECORD Missouriensis 4:23-25, 1982

TAXON	COUNTY	DATE	COLLECTOR & #	DEP.
Lepdodictyum riparium (Hedw.) Warnst.	GREENE	4-25-74	Redfearn 31438	SMSU
Carex crinita Lam var. brevicrinus Fern.	STODDARD	7-8-80	Jones 57	SEMO
Rumex patientia L (from Wiggers, L.E. 1978. A revision of the genus Rumex in North America, Rhodora 79(3): 432-507.)	ST. LOUIS	6-13-53	Peterson 6195	NY
Cassia nictitans L. (Previously reported as C. fasciculata, Bot. Rec. 2:24; annotated by J. Doe)	DALLAS	8-30-81	Knight 679	SMSU

Figure 2. Sample response card (to be included with specimens when sent to herbarium).

FRONT

Contributor's Name
Contributor's Address
00000

*——Proper postage prepaffixed

Mr. Asa Gray, Editor
Botanical Record
3423 Perigynia Blvd.
Floraville, MO 65113

* is Index Herbariorum designation to which herbarium specimens were sent.

BACK

The following new county records have been deposited in *

(List specimen data in same format as sample update page.)

I have received the above specimens: _____
Curator

WHO LOVES A SWAMP?

Wanda Oskins, Botany Department
Southern Illinois University, Carbondale, IL 62901

Who loves a swamp?

Roderick Nash posed this question in a paper addressing the three rationales that have dominated various periods of the conservation movement. The first and second rationales, utilitarian economics and aesthetic monumentalism, resulted in National Forests and other breath-taking preserves of beauty. These two rationales still contribute to the philosophy of nature protection; however, during the 1920's, recognition of the science of ecology "broadened the concepts of utility and beauty to include everything that contributed to the intricate, interdependent community of life forms and earth forms(Nash 1978)." On the basis of this ecological rationale, ordinary communities, or even the less than desirable--often miserable--found in ecological communities, could be deemed worthy of protection and professional management. Yes-even a swamp!

At one time over two million acres of impenetrable swampland existed in southeast Missouri. Less than 50,000 acres remain. A combination of logging, drainage, and farming activities have all but eliminated the dynamically balanced swamp from Missouri.

In 1938, 1007 acres deep in the Missouri bootheel were preserved as a state park, Big Oak Tree. In 1977, 940 acres of the park swamp and bottomland forest were protected as a Missouri Natural Area. As a public tract of remnant Missouri swampland, the area is exceeded in size only by the Mingo National Wildlife Refuge-Duck Creek(DOC) system (approx. 28,000 acres).

Old growth bottomland forests dominate Big Oak Tree. Eleven state and two national champion trees include Pumpkin Ash(*Fraxinus tomentosa*), Rusty Nannyberry(*Viburnum rufidulum*), Eastern Cottonwood(*Populus deltoides*), Slippery Elm(*Ulmus rubra*), Shumard Oak(*Quercus shumardii*), Swamp Chestnut Oak(*Q. michauxii*), Bur Oak(*Q. macrocarpa*), Paw Paw(*Asimina triloba*), Possumhaw(*Ilex decidua*), Swamp Privet(*Forestiera acuminata*), and Black Willow(*Salix nigra*). Other species of the swamp are the pristine Bald Cypress(*Taxodium distichum*), Tupelo Gum(*Nyssa aquatica*), Water Locust (*Gleditsia aquatica*), and Sugarberry(*Celtis laevigata*). More mesic portions of the alluvial plain harbor Pecan(*Carya illinoensis*), Kingnut Hickory(*C. laciniosa*), Cherrybark Oak(*Q. falcata* var. *pagodifolia*), and Basket Oak(*Q. lyrata*). The fragrant Spicebush(*Lindera benzoin*) and the Water Elm(*Planera aquatica*) are components of the understory.

Because elevation fluctuates less than five feet and the park is located less than two miles from the Mississippi River, all elements of the flora which persist must be adapted to periodic or seasonal inundation. Interesting herbaceous elements include *Sesbania exaltata*, a tall legume growing abundantly in the park's unique shrub-swamp community known as Grassy Pond; and the Vining Cucurbit, *Cayaponia grandifolia*, known only

from three southeastern counties in our state. The Ladies' Eardrops (Brunnichia cirrhosa), the Birthwort(Aristolochia serpentaria), the Pepper Vine(Ampelopsis arborea), and Trepocarpus aethusae, a native umbel found new to the state, grow on the forest floor associated with the tallest of the Taxodium trees. Thick stands of Giant Cane (Arundinaria gigantea) represent necessary breeding conditions for the rare Swainson's Warbler. Growing epiphytically on the tallest trees is the Gray Ressurection Fern(Polypodium polypodioides).

Floristic documentation of Big Oak Tree has yielded numerous county records and a concern for the future maitenance of this native ecosystem. Big Oak Tree State Park is encroached upon on all sides by agricultural holdings--indeed a true island ecosystem! This forested wetland is connected hydrologically to the nearby river. Levee and channelization projects, including in-park ditches constructed during the '50s, appear to have altered the original water dynamics. Fluctuating water levels are further complicated by the activity of an increasing beaver population.

Professional ecosystem management may be necessary to maintain primeval swampland conditions as opposed to altered community composition. An understanding of the balanced forces that created and maintain the swamp ecosystem becomes complex but ever so important.

Research at the park includes quantitative measurements of community composition and hydrologic data collection. Upon interpretation of the information viable swampland management strategies should be forthcoming.

Three management philosophies permeate ecological thought at the presesnt (Boner & Heitlinger 1980). Managers may manage 1)for restoration of altered natural processes; 2)for natural elements or features considered important or most significant at a preserve; 3)active restoration--management practices that become necessary when the disruption of natural processes has destroyed community integrity so extensively that the reintroduction of the process may be an impossible or insufficient restoration measure. The overall goal of management in any context should be the preservation of biological diversity.

Any further loss or disruption of native swampland represents the loss of Missouri's native diversity; systematically it represents the loss of numerous species uniquely inter-related.

There are reasons to love a swamp!

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Boner, Rex and Mark Heitlinger. 1980. "Restoration and Managemnt: The Steward's Point of View." Restoration and Management Notes 1:1.

Nash, Roderick. 1978. "Who Loves a Swamp?" Proceedings of the Symposium: Strategies for Protection and Management of Floodplain Wetlands and other Riparian Ecosystems. US Dept. of Ag. Forest Service, Wash. DC.

Book Reviews

SPRING WILDFLOWERS OF MISSOURI, by Bruce Schuette, Paul Nelson, and Terry Boldt.

A small field guide to spring wildflowers has recently been published by the Department of Natural Resources. It was designed specifically for visitors to Missouri State Parks who may have only a casual interest in wildflowers and thus are not willing to invest in Denison's Missouri Wildflowers or Steyermark's Spring Flora of Missouri. At $1.25 this book should fill the need for an inexpensive guide which includes the majority of species conspicuous along trails during the spring season.

The format consists of a full page (5½ X 8½) line drawing of each of the 43 species included, with a facing page of information about the species. This information includes the common name, scientific name, blooming date, height, habitat, a non-technical description, and a paragraph of interesting notes about the species (i.e. present and past uses, meaning of name, whether poisonous or edible). All of the illustrations are by Paul Nelson, and are of excellent quality. The arrangement of the species is by color, with the color indicated at the top of the page. Two pages in front of the book include illustrations of leaf and flower morphology.

While it is obvious that such a low cost book was not meant to be complete, it is unfortunate that such common and conspicuous species as wild hyacinth, wild garlic, and blue-eyed grass were not included. Perhaps it would have also been of value to include some of the "weedy" spring flowering species as henbit, corn gromwell, shepherd's purse, speedwell, chickweed, and wild chervil. The latter are certainly common and conspicuous and are probably the first encountered by visitors at a picnic or camping site.

It should be emphasized that the book could be used anywhere in Missouri, and because of its inexpensive price should be of particular interest to groups, such as scouts or science classes, interested in nature study. Overall it is an excellent publication for its purpose and it is hoped that the Department of Natural Resources will consider publishing similar booklets which would cover the summer and fall flora.

Wallace R. Weber

MISSOURI ORCHIDS, by Bill Summers.

Amateurs and professionals alike will welcome this recent publication on Missouri orchids published by the Missouri Department of Conservation. The 92 page field guide includes 35 taxa (33 species and 15 genera) each illustrated with a color photograph (15), or a line drawing (2), or both (18). The majority of the color photographic reproductions is good to excellent, with only 1 or 2 of rather poor quality. Pen and ink drawings, all by Rebecca Haefner, are included to emphasize the inflorescences of many small flowered species, and are superb. Each genus and species heading is followed by common names, scientific name (including synonomy), the period of flowering, a description of the habitat (sometimes including associated species of that habitat), and a description of the genus or species. Also accompanying each species description is a dot distribution map, which includes those records indicated in Steyermark's Flora of Missouri, as well as more recent records verified by the author's visit to "Missouri herbaria". It would have been of greater value for future reference had he distinguished Steyermark's records from more recent collections (perhaps with open and closed circles) and had listed which herbaria he had visited (even though he indicated "all" herbaria were visited, I am still not sure which were included). Also included on the maps are 60 county references (diamond symbols) to sightings not verified by herbarium collections. Keys are included for those professionals and dedicated amateurs who do not wish to—

"window shop". They are simple, but well constructed keys, written in simple language that even the most casual amateur could understand, perhaps with some help from the glossary in the back of the book. The glossary is generally pretty inclusive; however, some terms frequently used in the keys (such as bracts, lanceolate, linear, oblanceolate, and two-ranked) have been omitted.

Copies are available in bookstores, from the Department of Conservation in Jefferson City and from metro offices in Springfield, Kansas City, and St. Louis. The book is softbound, and, at $3.00 in these times of inflated and outrageous book prices, is a real bargain! According to the Publications Editor of MDC, this is the first in a series of natural history books to be published by the department. If all are as professional as this one, this reviewer anxiously awaits the publication of others.

Wallace R. Weber

WEEDS OF ARKANSAS: Lawns, Turf, Roadsides, Recreation Areas--A Guide to Identification, by Ford L. Baldwin and Edwin B. Smith.

A very excellent, 71 page publication with 205 colored photos of weeds has recently been published by the University of Arkansas Cooperative Extension Service, P.O. Box 391, Little Rock, Arkansas, 72203. While it is entitled Weeds of Arkansas, it is very appropriate for use in Missouri. Of the 187 taxa illustrated, only 18 (ca. 10%) are taxa not listed in Steyermark's Flora of Missouri, although several of those included in Steyermark are not common. Most pages have 3 photographs, next to each of which is listed a scientific name and common name, as well as a brief account of each species. Each account consists of a non-technical description of both vegetative and floral characters, blooming time, and, in many instances, information on where it is likely to be encountered as a weed. About one half (102) of the photographs have a small circular inset of the enlargement of the flower or some other important feature of the species which is difficult to see in the main photograph. In general, most of the photographs are of good to excellent quality; however, it would have been helpful if a few more photo insets had been used in photographs of such taxa as Alchemilla, Oenothera, Vicia, and some of the grasses. The species are arranged by family, and the 41 families arranged alphabetically. The book is paperback, 8½ X 11 in size, and sells for $5.00.

Although one purpose of the book is to assist persons in weed management programs in the correct identification of plants, those interested in nature and the study of wild flowers will find this publication a great addition to their bookshelf.

Wallace R. Weber

THANK YOU!

The Board of Directors and the Editorial Committee are exceedingly grateful that photo-copying, collating, stapling and mailing of this issue of Missouriensis has been undertaken as a generous gesture to a state-oriented organization, by the state supported printing services of Southwest Missouri State University. This is a worthy and much appreciated contribution to the financial welfare of the Missouri Native Plant Society.

ENDANGERED WILD FLOWER CALENDER

(Editor's note: Although it is late to announce publication of a 1982 calendar, we print the following because this particular calendar contains so much textual material of interest to wild flower lovers, at any time of year.)

Three thousand kinds of American wild flowers - one out of every ten native to the U.S. - are threatened with extinction by man's activities. More than fifty have already disappeared. Information about the causes of this problem, and strategies for conservation, are provided in the Endangered Wild Flower Calendar described below. The calendar includes an invitation for people to support and cooperate with botanical gardens and societies in their recovery efforts. The message is a positive one: we can save our endangered American flowers if we work together, but it should be soon.

The calendar is 10½" x 17" when opened and includes:

- fourteen attractive, full-color photographs of endangered wild flowers in their native habitats, with species from each section of the country.
- information about the habitat, unique features, reasons for endangerment and recovery plans for each of the flowers shown.
- suggested ways for concerned citizens to help endangered flowers in their region of the country, with addresses for further information.
- a map of the U.S. showing the number of endangered plant species in each state.
- a list of selected reading material, including two books suitable for children.
- full page calendars with space for notes each day of the month.

The Endangered Wild Flower Calendar was produced by members of the New York Botanical Garden, New England Wild Flower Society, North Carolina Botanical Garden, Tennessee Native Plant Society, Hobby Greenhouse Association, Arizona-Sonora Desert Museum, California Native Plant Society and Brooklyn College of the City University of New York, with assistance from botanists of the U.S. Fish and Wildlife Service-Federal Endangered Species Program. Funds raised from sales will benefit both regional and national conservation programs.

Calendars can be obtained by sending $5 to Rare and Endangered Native Plant Exchange, c/o New York Botanical Garden, Bronx, N.Y. 10458. Please add 50¢ per calendar to cover mailing costs. Satisfaction is guaranteed or full refunds will be made.

Adopted December 5, 1981

MISSOURI NATIVE PLANT SOCIETY
REVISED BYLAWS

Article I - PURPOSE OF THE SOCIETY

Section 1. Purpose of the Society
The purpose of the Missouri Native Plant Society is to promote the preservation, conservation, and study of the wild plants and vegetation of Missouri, the education of the public to the value of the native flora and its habitat, and the publication of related information.

Article II - MEMBERSHIP

Section 1. Membership
Membership in this Society shall be open to all persons interested in the native plants of Missouri upon application to the Secretary, accompanied by remittance for dues as hereinafter provided. Membership classifications shall be set as needed by the Board of Directors.

Section 2. Right of Members to Vote
Each member shall be entitled to one (1) vote on any question requiring a vote of the membership of the organization.

Article III - MEETINGS

Section 1. Meetings
An annual meeting of the Missouri Native Plant Society shall be held at the date and place to be decided by the Board of Directors. Special meetings of the membership may be called at any time by the Board of Directors. All members shall be notified in writing, not less than two weeks before such meetings.

Article IV - DUES

Section 1.
Dues shall be fixed and reviewed as needed by the Board of Directors.

Article V - OFFICERS

Section 1.
The officers shall be a President, Vice-President, Secretary, and a Treasurer who shall be elected for a term of two years. No individual shall serve more than two consecutive terms in the same office. Officers shall serve without compensation.

Section 2.
The President shall preside at meetings of the membership and of the Board of Directors and shall perform the recognized functions of the office.

Section 3.
The Vice-President shall preside in the absence of the President and shall perform the recognized functions of the office. He shall become President if the office of President becomes vacant. The Vice-President will automatically be nominated as President for the next election.

Section 4.
The Secretary shall keep the minutes of all meetings of the Board of Directors and the Society. The Secretary shall prepare such directives and other documents as are needed and authorized by the Board of Directors.

Section 5.
The Treasurer shall keep and maintain accurate accounts of the transactions of the Society, including accounts of its assets, liabilities, receipts, and disbursements. The Treasurer shall deposit all monies and other valuables in the name and to the credit of the organization with such depositories as may be designated by the Board of Directors. He or she shall disburse the funds of the Society as may be ordered by the Board, shall render to the President and Directors whenever they request it, an account of all his or her transactions as Treasurer and of the financial condition of the Society, and shall have such other powers and perform such other duties as may be prescribed by the Board of Directors or the Bylaws. The Treasurer shall maintain a roster of all active members.

Section 6.
Each officer shall, upon the expiration of his term, or the termination of his duties for any other reason, deliver to his successor the records of the office.

Section 7.
A vacancy in the office of Vice-President, Secretary, or Treasurer may be filled by an election held for this purpose at a meeting of the Board of Directors.

Article VI - GOVERNING BODY

Section 1. The Board of Directors
All official business shall be conducted by the Board of Directors of the Missouri Native Plant Society. Only members of the Society shall be eligible for Board membership.

Section 2. Membership of the Board
The Board of Directors shall consist of the elected officers of the Society, the immediate past President, the Editor of Missouriensis, the Chairmen of such standing committees as may be appointed by the Board of Directors, and six members elected by the general membership. At the first election of the Society, two of these shall be elected fo a one year term. Two shall be elected for a two year term. Two shall be elected for a three year term. Thereafter all elected officers sha serve three year terms of office. The Directors shall serve without compensation. Chairmen of the standing committees shall serve for two years and take office with the new Board. The Editor of Missouriensis shall appoint an Editorial Committee, which the Editor will chair.

Section 3. Vacancies in the Board of Directors
A vacancy in the Board of Directors shall be filled by the majority vote of the Board of Directors. A Director thus elected shall hold the office for the unexpired term.

Section 4. Meetings of the Board of Directors
There shall be a meeting of the Board of Directors at the time and place of the annual meeting. Additional meetings may be called by the President, or in his or her absence or inability, by the Vice-President. In the event of the refusal of the President to act a special meeting may be called by five Directors. Adequate notification of the date, time and place of the meetings of the Board of Directors shall be given by the Secretary to each Director.

Section 5. Quorum of the Board of Directors
The presence of six voting Directors at a Board meeting shall be necessary to constitute a quorum for the transaction of business. Every act or decision by a majority of the Directors present at a meeting duly held, at which a quorum is present, shall be regarded as a valid act of the Board of Directors.

Article VII - ELECTIONS

Section 1.
Notice of the annual election shall be made in writing.

Section 2.
The President shall appoint a Nominating Committee to consist of a Chairman and three or more members of which only one is a member of the Board of Directors. They shall report to the President the names of the nominees selected by the Committee. The names of the Nominating Committee, a list of the offices to be filled and the names of the nominees are to be printed in the Missouriensis, or reported to the membership by mail.

Section 3.
Members may suggest nominations to the Nominating Committee.

The name and qualification of any paid member, submitted for a particular office by a group of five paid members, must be included on the ballot if in the hands of the Nominating Committee before the close of nominations. A ballot including the nominations shall be printed and mailed to all paid members with instructions for its return within a reasonable and specified time.

Section 4.
Ballots shall be counted by a Ballot Committee appointed by the President, and the candidates receiving the most votes certified as elected. In case of a tie vote the Board of Directors shall decide. The newly elected officers shall take office at the conclusion of the annual meeting.

Article VIII CHAPTER AND AFFILIATE ORGANIZATIONS

Section 1.
A group of five or more persons, members or nonmembers of the Society, may organize a chapter of the Missouri Native Plant Society by a request to the Society Secretary and with approval of the Board of Directors. The request shall be accompanied by the payment of current dues for each nonmember to the Society Treasurer.

Section 2.
Members of the chapter shall elect their own officers, consisting of at least a President, Vice-President, Secretary and Treasurer (or Secretary-Treasurer). All election results shall be promptly reported to the Secretary of the Missouri Native Plant Society

Section 3.
Duties of the chapter officers shall be those usually associated with the office.

Section 4.
All members of a local chapter have full membership in the Missouri Native Plant Society, and are entitled to all the privileges pertaining thereto.

Section 5.
Local chapters are authorized to adopt their own bylaws, not inconsistent with those of the Society.

Section 6.
Each chapter is encouraged to have its own programs and educational exhibits.

Section 7.
An already organized club or society may be known officially as an "Affiliate" of the Missouri Native Plant Society upon payment of annual dues of $10.00 for the organization. One copy of Missouriensis will be sent to the President of the Affiliate organization.

Section 8.
Publications and reports of chapter meetings or any articles should be sent to the Editor of Missouriensis. Affiliate organizations are encouraged to send newsworthy items to the Editor.

Section 9.
No chapter or affiliated society, or any officer or member thereof except with approval of the Board of Directors, shall have power to act for the parent society in any official manner, financially or otherwise. Local chapter shall hold harmless the Missouri Native Plant Society from any liability in connection with activities or functions of the chapters.

Section 10.
Meetings of the members of local chapters shall be held not less than four times annually, the time and place to be decided by the local officers.

Section 11. DUES
Each chapter Treasurer or Secretary-Treasurer shall collect the annual dues of the Missouri Native Plant Society from each member and shall remit the dues to the Treasurer of the Society.

Article IX - FISCAL YEAR

Section 1.
The fiscal year of the corporation shall be the calendar year.

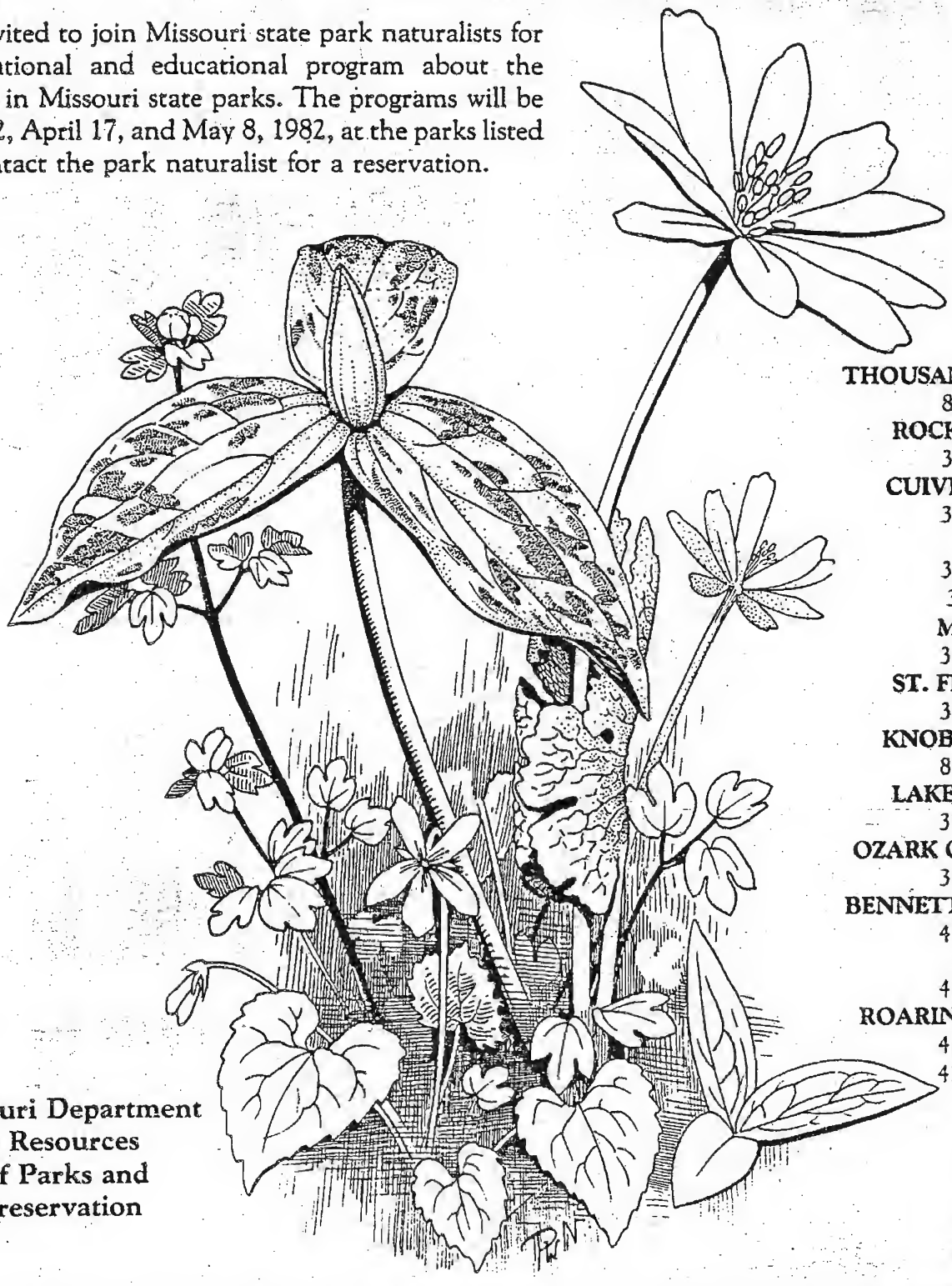
Article X - AMENDMENTS

Section 1.
These bylaws may be amended by an affirmative vote of 75% of the Board of Directors.

SPRING WILDFLOWER

WALKS IN MISSOURI STATE PARKS

You are invited to join Missouri state park naturalists for an informational and educational program about the wildflowers in Missouri state parks. The programs will be held April 2, April 17, and May 8, 1982, at the parks listed below. Contact the park naturalist for a reservation.



THOUSAND HILLS
816-665-6995
ROCK BRIDGE
314-449-7402
CUIVRE R
314-528-1247
BABLER
314-273-5148
314-458-3813
MERAMEC
314-468-6072
ST. FRANCOIS
314-358-2173
KNOB NOSTER
816-563-2939
LAKE OZARKS
314-348-2694
OZARK CAVERNS
314-346-2500
BENNETT SPRING
417-532-3925
PRAIRIE
417-843-4431
ROARING RIVER
417-847-3742
417-847-2539

The Missouri Department of Natural Resources
Division of Parks and Historic Preservation